3. Game Sanctuaries and Game Protection in India.

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I. Introductory Remarks.

Could some of the great sportsmen who lived and revelled in the land half a century ago revisit the scenes of their former exploits, how, it may be wondered, would their favourite shooting-grounds strike them at the present day ?

We have all read our Forsyth's 'Highlands of Central India,' Sterndale's 'Seonee or Camp Life in the Satpuras,' Saunderson's 'Thirteen Years' Sport in India,' Simson's 'Sport in Eastern Bengal,' Pollok's 'Sport in British Burma,' Pollok and Thom's 'Wild Sports of Burma and Assam,' Pollok's 'Sporting Days in Southern India,' Kinloch's 'Large Game Shooting in Thibet, the Himalayas and Central India,' Col. Fife-Cookson's 'Tiger Shooting in the Dun and Alwar,' Baker's 'Wild Beasts and their Ways,' Eardley-Wilmot's 'Forest Life and Sport in India,' etc. What lesson does a perusal of these fascinating volumes teach us—inevitably tell us ? That the Game of India is on the decrease and on a very rapid decrease, and that the good old days of yore are gone, never to return.

That the modern rifle has to some extent been responsible for the present state of affairs is beyond cavil—its accuracy and also the cheapness with which the more roughly made forms can be purchased. The native shikari has now to some extent replaced the old blunderbuss of his father's days by a breech-loader, and when possessed of such kills an infinitely larger head of game in the year as a consequence. The weapon itself costs Rupees 45 only, but it is doubtless the price of cartridges which mercifully prevents the breech-loader from coming into as general use amongst this class of men as would otherwise be the case.

But the startling decrease which the head of game existing in India has undergone during the last two or three decades cannot be attributed only to the improved accuracy of the weapons with which the modern-day sportsman is armed. The opening out of the country and the consequent restriction of the animals is largely responsible. For instance, Bengal and Assam, *e. g.* the Western Duars, no longer contain sufficiently extensive jungles to harbour rhinoceros and buffalo. The great increase in the number of sportsmen who visit the jungles annually on sport intent, an increase brought about chiefly by the greatly improved communications owing to railway and road development, has also been a great factor in the case ; and, finally, the infinitely greater number of competent native shikaris in existence ; I write "competent" in the sense merely to express their power to *kill* game. The vast majority of these men are poachers pure and simple, as were their fathers and fathers

fathers before them. Formerly, however, owing to their antiquated low-power weapons, the damage they were capable of doing was of a negligible quantity: nowadays it is far otherwise, and the methods to be put in force to deal with them form one of the most difficult problems those responsible for the upkeep of the game in the forests, and country generally, have to solve.

The plea ever placed in the forefront by such men is that the guns are required to protect their crops, and this plausible excuse has been accepted by Local Government after Local Government; and we can quite see the difficulties that have faced the latter, and still do so, in a settlement of the question. It cannot, however, be said to have been ever satisfactorily or fairly faced, and this inaction on the part of the central authority has checkmated the efforts of many a Collector and Forest Officer in his attempts to keep down the number of (poaching) guns in a district. A sympathetic Government has always been too eager to listen to the tales of destruction to crops, and the District Officer, without local knowledge, prefers to err on the side of liberality, and so readily grants licenses to applicants.

We all know the way these license gun-holders go to work. A machan (platform) is built on a known deer-run on the edge of the forest and just without its boundary, if not inside, with the connivance of the Forest Guard. The shikari occupies his post in the late afternoon, and by sunrise next day several bucks and does may be lying round the machan; the skins, horns, should there be any of the latter, and the flesh are taken off to the bazaar, where a ready sale is found for them throughout the country. The meat is sold locally, the skins and horns being bought by middlemen for export. It is a common thing to see on the platform at wayside stations near forest-areas piles of skins and horns booked, and openly booked, in defiance of all rules and regulations, to some large centre.

I would not be understood to say that it is the native shikari alone who acts in this way. It is an open secret that the native soldier of shikar-loving propensities, as also his British brother, will act in an exactly similar manner on occasion. Once, however, this matter is properly faced, the latter class of offenders can easily be coped with. For the non-military native offender a license to protect his crops should be given only after careful personal enquiry on the ground by the District Officer. Also the sale of venison in the open market should be made a criminal offence.

The whole crux of the position is, of course, the necessity for regulating the number of animals shot, so as to prevent deterioration or extermination of the game. On the whole, the European is more destructive than the native to the animals which are greatest in need of protection. Rules and the proper control and management of shooting-grounds can control the European. The native is, however, not so easily dealt with. In order therefore to arrest the slaughter which takes place ostensibly to

protect crops, some special measures are necessary. Wherever it can be proved that game is no longer destructive, the licenses should be cancelled and the weapons called in. In other cases where destruction is still being done the guns must be retained. Since, however, these weapons are given merely for the protection of the crops, they should be restricted to that purpose and be rendered unfit for any other. This can be easily done by cutting down the gun-barrel to 18 inches or 2 feet.

A further point of importance in connection with the protection of game is to be found in the sale of ammunition. It is a question for consideration whether this should not come into the hands of Government and be directly regulated by it. This question scarcely comes under the head of Game Sanctuaries, but it is of very considerable importance in the interests of Game Preservation.

The apathy which the proper protection of the Game of the country has met with in the past at the hands of Government is almost incredible. In many parts of the country there are forests in blocks of very considerable area. Rules under the Forest Act have been in force in these forests for years, a sixth of British India being under the Act and Rules. It would have been sufficient merely to have enforced these rules in the spirit as also in the letter, and adequate protection would have been afforded to species which are now, owing to this apathy and neglect, within a measurable space of deterioration, if not of total extinction.

Lord Curzon, so long ago as December 1901, when replying to the Burma Game Preservation Association at Rangoon, said he was in "close sympathy" with the aims of that body.

That he recognised the importance of the subject is shown by his opening remarks, in which he said:—"Among the many memorials which the enterprising inhabitants of Lower Burma have showered upon me, and to all of which it has not been possible for me to give a verbal reply, I have selected yours as one of those to which I should." He then observed that the great importance of the question of Game Preservation in India is one that, in his judgment, appealed not only to the sportsman but also to the naturalist and the friend of animal life.

Further on he stated that facts pointed entirely in the direction of the "progressive diminution of wild life in India," and gave examples in support of this belief. He then mentioned some of the "artificial and preventable" causes of this diminution, and also of those which are "natural and inevitable." He admitted that hitherto the attempts made by Government to deal with the question by legislation or by rules or notifications based on statutes had been somewhat "fitful and lacking in method," and, after mentioning some of these attempts, he said:—"The general effect of these restrictions has been in the right direction, but I doubt if they have been sufficiently co-ordinated, or if they have gone far enough, and one of my last acts in Simla, before I had

received or read your memorial, was to invite a re-examination of the subject, with the view of deciding whether we might not proceed somewhat further than we have already done."

His idea was "to frame some kind of legislation of a permissive and elastic nature, the provisions of which should be applied to the various provinces of India, in so far only as they were adapted to local conditions." Unfortunately, however, he did not deal with one of the most difficult sides of the question, viz., the co-operation of Native States; he merely observed that this question is "somewhat complicated," and expressed his belief that "The Government would meet with the willing co-operation of the Chiefs."

There does not appear to be at the present moment, notwithstanding the Viceroy's action, so far back as 1901, any Act or Regulation issued by the Government of India, defining the principles governing the protection of game, and the means by which such protection should be effected.

Of late, however, matters for the protection of game have to some extent considerably improved, and Local Governments throughout the country have revised their Game Rules, and in some cases have ordered the formation of Game Sanctuaries in addition to limiting the number of head of game to be shot in a district or block of forest to a definite number per year. Further, in certain provinces sportsmen are only allowed to kill individually a certain head of each different species of animal, thus eliminating the worst feature of the old-time sportsmen—the butcher, whose boast was not the size of the trophies he obtained so much as the *number* of animals he had killed. For the departures thus made throughout the country I think a due meed of credit should be accorded to the Nilgiri Game Association. Inaugurated about 1885, this Association has now for years not only protected the game of the Plateau which the sportsmen and the Todas between them were surely exterminating, but has enabled an increase to be maintained and recorded. The last annual reports of the Association point to a satisfactory increase in the head of Saddlebacks (*Hemitragus hylocrius*) and the Sambhar (*Cervus unicolor*). For some years past the number of such to be shot by each sportsman has been regulated under the authority of the Association, directly supported by Government. The departure thus initiated in the distant Southern Plateau was followed in the far North when the game of Kashmir was threatened with extinction owing to the annually large recurring influx of sportsmen who visited the Fair Vale. Game Protection in Kashmir now forms a separate Department of the State, as, I think, it should in British India, and one which has fully achieved under its able head the objects anticipated from its inauguration. The enlightened ruler of Chamba State also took up the question, and prohibited all shooting except on passes issued on his own authority.

Whilst such laudable commencements were thus made to

preserve the game of areas which, owing to their peculiarly favourable climatic conditions for the European sportsman, were threatened with extinction, the Local Governments in India were very apathetic in the matter. Game Rules were in existence for the Forest Reserves of the country, but they related chiefly to a close season, the latter in some cases only applicable to the females, and the same was the case for the open country, where the rules usually related to birds only. These regulations were, however, openly broken, and the penalties in existence were practically rarely put into force, except by some exceptionally energetic officer; and even then an appeal was usually upheld and the orders passed reversed.

At length, however, the apathy that hung over this question gave place to some show of interest, which was followed by activity on the part of the Government of India, on whom it had slowly dawned that there was perhaps some reason for the outcry, increasing in intensity each year, that the game of the country was doomed and that but a few years separated it from extinction. Local Administrations were addressed on the subject of the Rules and Regulations in force in their Presidencies and Provinces under the Forest and other Acts, and as to the steps necessary to be taken to prevent the extinction of the several heads of game, excluding carnivora. This led to many separate enquiries being undertaken throughout the country, to a prolific correspondence in the Press, of which desultory rumblings are still heard, and to many improvements being initiated in the Shooting and Game Rules throughout India. I am aware that I am laying myself open to serious attack in thus stating the case, but it is maintained that any and every rule that is made with the idea of *protecting* the game of a country is a step in the right direction, and therefore advantageous both to the sportsman and the game itself, however hard it may seem to fall on a particular body of individuals or a particular individual. This point will be referred to at some length later on, but I would like to appeal here to the public spirit and fairness of all true sportsmen to aid to the best of their abilities the present endeavours of the Government of India in the direction of arresting the destruction of Wild Animals. I feel sure that the Government will approach this matter in a much firmer spirit if they feel that they have behind them the good wishes of a solid mass of sportsmen throughout the country.

What is required is to fix the close seasons definitely, and the Government of India have now, as we shall see, proposed to legislate to give power to fix a close season for different kinds of game.

In a series of articles published in the 'Indian Field' between the dates 6th June, 1907, and August 1907, a writer thus approached this question :—

"We presume that the Imperial Government, as proprietor of all the game in the country, is the most important party concerned

in its preservation, and that in effecting this object it has every right not only to safeguard this valuable asset, but also to obtain a reasonable profit therefrom. Less than half a century ago this principle was acted upon when forest lands were taken possession of, and now the villager has to pay for every bundle of grass and bamboo that he obtains from Government forests for building his humble abode." This latter, by the way, is not a true representation of the actual facts of the case, for many forests are burdened with "rights," under which large amounts of forest products are annually given away free to villagers by the Government.

"The agricultural community is certainly the next important body whose interests will be affected. In European countries, in England for example, the population have a firm conviction that the right of killing game belongs to them, contrary to the practice of centuries. In India, no such difficulties surround the game-protection question. The occupiers of the soil have no conviction whatever that they possess the right of property in the game animals and birds that abound in their fields and jungles. They are concerned only about the protection of their crops from the raids of these animals. If this right of protection is recognised, and the Government which assumes ownership of all game acknowledges its responsibility in this respect, it can be confidently stated that no apprehension need be felt regarding the attitude of the Indian rural population towards the proposed law. Legislation for the protection of game in this country will not create any feeling comparable to that which still exists in the minds of the people regarding the action taken by Government when forest lands were resumed fifty years ago." The analogy, it may be pointed out, scarcely holds, since the forests of the country are protected solely in the interests of the people themselves and posterity, whilst the protection of game is undertaken in the interests of the sportsman and in that of science.

"The third class which will be affected by this law is sportsmen, European and Indian. In the former category should be placed, first, the official who is backed by Government authority and his favoured friends who are given all the facilities which his position allows; next, the solitary hunter with his small camp and all the Game Regulations of the Province to keep him in the right path. The subdivisions in this class are numerous, and include the unemployed colonel putting in his time, the subaltern out on ten days' casual leave, the humble clerk who can occasionally get away from his office for a week, and the British soldier let loose in parties for fixed periods.

"Next comes the Indian shikari, who is also numerously subdivided. There is the rich land-owner, possessed of unlimited sporting appliances and his host of followers; the professional game-killer who lives by his licensed gun; the small landholder who does not know how to use a firearm, but whose dignity is enhanced by the possession of weapons,—freely lent to his

underlings for supplying his kitchen with fresh meat; and, finally, the half-starved villager of the meaner castes, who is given a gun for use at night in the fields, but which weapon is regularly and illegally used for the destruction of game animals of every prohibited class. In this inventory, the Gurkha soldier does not find a place, for he belongs to a class which he amply fills by himself with his small but very important personality. He deserves separate notice. From the banks of the Sarda on the frontier of Nepal, to the banks of the Indus, the battalions of these gallant little men are scattered in cantonments all along the outer spurs of the Himalayan range. In seven or eight of these locations there are at least fourteen thousand of these disciplined warriors, who, in the absence of opportunities for spilling human blood legitimately, are given a free hand for slaughtering wild animals, along five hundred miles of the best hunting grounds in Upper India."

I propose, then, to consider first the question of the formation of Game Sanctuaries, defining a Game Sanctuary and the different ways of forming them, and detailing what has been done under this head in the several Presidencies and Provinces of the country and what in my opinion it would seem still remains to be done.

I shall then give an abstract of portions of the proposed new Indian Game Act, making some suggestions for specifying more distinctly than the Act does at present the various classes of game, and suggesting that the game animals and birds, as also useful insectivorous birds, shall be severally mentioned in the Act by name. I shall then indicate some specific suggestions for the formation of close seasons and for the closing to shooting of species which have been decimated by drought, anthrax, etc., and for the definite regulation from year to year of the number of head of particular species to be shot in given areas; concluding, finally, with some remarks on the subject of the proportion of the head of game of a district to be shot respectively by the district officials and the outside sportsman.

II. The Game Sanctuary.

The idea of the Game Sanctuary was a natural outcome of the indiscriminate slaughter to which wild animals have at all times and in all countries been subjected by man. So long as it was man imperfectly armed against the animal with his natural sagacity or fierceness to protect him, conditions were equal, or in favour of the animal, and there was no reason for intervention. From the day, however, of the introduction of the breech-loader and the repeater and a whole host of perfectly built weapons of every kind, enabling man to kill with comparative ease and certainty, the odds were against the animal and the question of affording some degree of protection to the game of a country became of paramount importance; and, curiously enough, the

question became most vital in the more uncivilized, uninhabited, and wilder portions of the globe. Such shooting grounds were open to one and all, just as for centuries the shooting in India had been open, with the result that the modern rifle soon threatened the extinction of all game. That modern conditions have rendered this quite feasible the two well-known and oft-quoted instances afforded by the practically extinct American bison and the extinct quagga of South Africa sufficiently illustrate.

In India we have come within measurable distance of exterminating the rhinoceros (*Rhinoceros unicornis*), which, together with the elephant and the gaur or Indian bison (*Bos gaurus*), would without protection probably soon disappear from the jungles which have known them for so long.

It may be mentioned here, in passing, that Indian ruminants, such as the gaur, sambhar, etc., and the elephant, have always had to contend against a sickness resembling anthrax, and also against drought, which at times have decimated their numbers over large tracts of country.

With a view to affording a certain protection to animals of this kind and of giving a rest to species which have been heavily thinned in a district by indiscriminate shooting in the past or by anthrax, drought, etc., the idea of the Game Sanctuary was introduced into India (and in other parts of the world) and has been accepted in many parts of the country. The sanctuary consists of a block of country, either of forest or grass-land, etc., depending upon the nature of the animal to which sanctuary is required to be given; the area has rough boundaries such as roads, fire lines, nullahs, etc., assigned to it, and no shooting of any kind is allowed in it if it is a sanctuary pure and simple; or the shooting of carnivora may be permitted, or of these latter and of everything else save certain specified animals.

Sanctuaries may be formed in two ways:—

I. *The area is automatically closed and re-opened for certain definite periods of years.*

II. *The area is closed until the head of game has become satisfactory, and the shooting on the area is then regulated, no further closing taking place, save for exceptional circumstances.*

I. *The Sanctuary is automatically closed and re-opened for a definite period of years.*—The Sanctuary is notified for a period of years: this period would naturally be variable, but it is of importance, I think, that it should not be placed at too great a length, or the animals in the sanctuary, so long immune from danger, would on the re-opening of the area be so unused to the sportsman that they would be shot down in a very short space of time. Probably the period during which a block of forest is closed to all shooting should never exceed, at the most, three years. That good sportsman Sir John Hewett considers that a period of five years for a sanctuary is too long. He thinks that the ground of the sanctuary should be changed every two or three years, probably the former, and

that the animals would soon learn where the sanctuary was. He also agrees that before opening a sanctuary to sportsmen the area should be *beaten* through so as to distribute and disperse the game, and not have them collected together Noah's-ark-fashion on a large scale for the first permit-holder who enters to shoot down with ease.

Whilst, however, this system of opening and closing areas to shooting is best adapted to some localities and to certain classes of game, it is quite inadequate for the satisfactory protection of others. In many parts of India I would favour the second suggestion as being by far the most satisfactory in the long run and in some cases essential.

II. *The area is closed until the head of game has become satisfactory, and the shooting on the area is then definitely regulated, no further periods of closure being enforced save for exceptional circumstances.*

The length of time a Sanctuary should be in existence is of very considerable importance, and to a certain extent is intimately dependent upon a knowledge of the habits of the animals for which the sanctuary is formed. The period of closure to be effective must depend :—

(1) On the condition of the head of game of the area when the sanctuary is first formed.

(2) *On the nature of the animal*, e. g., the rhinoceros, with a period of gestation of two years and a period of fifteen years before it reaches maturity, would require practically permanent closure of its haunts to produce any appreciable result, as has, in effect, been carried out in Goalpara in Assam.

The procedure followed should usually be determined by the condition of the head of game on an area. There would be no question of fixing a definite period for the sanctuary in the first instance. When the requisite effect on the game had resulted from its formation, careful and efficient rules and management should be sufficient to keep up the head of game, and it would not be necessary to continue the rigid exclusion of sportsmen. It would be sufficient to limit *the number of head of each species* to be shot *each year*, as is done in many parts of the Central Provinces. When the limit had been reached the shooting of that species in that locality would cease for the year.

Once a sufficient head of game has been established in a locality, it is questionable whether regulated shooting each year would not have a better effect than the alternative proposal of closure for a term followed by a period of unchecked shooting. It would certainly minimise the chance of the animals becoming too tame.

The size of a Sanctuary must, of course, entirely depend on local conditions and on the nature of the animals to be protected. Such animals as the rhinoceros or gaur, which are of an extremely shy disposition and are given to roaming considerable distances, would require an area of considerable dimensions, whereas chital

(*Cervus axis*) and hog-deer (*Cervus porcinus*) would require a comparatively small one.

Pheasants, again, would not require large areas, and the same applies to the hill sheep and goats—a nullah or certain nullahs being prescribed as closed to shooting, as, in fact, is done in Kashmir.

Game Sanctuaries may be of several kinds:—

1. Entirely closed to all shooting.
2. Closed to beating only.
3. Closed to the shooting of certain species of game.
4. Closed to shooting of all game, save noxious ones, such as carnivora, pig, etc.

The question of enforcing the sanctuary law against shooting is one of some difficulty. In Reserved Forests it is comparatively easy, since all shooting without special passes in such areas is forbidden and the granting of these would be stopped for sanctuaries. Outside, however, the matter is by no means so simple, and the people of the country, particularly the shooting element, will require a careful education if they are to understand and respect the sanctuary, should it be formed in Government Waste Land. It will be necessary to fully explain the uses of sanctuaries, and the reason for closing the areas as soon as attempts have been made to form them.

At present anyone may enter on land, which is not reserved forest, and shoot. To alter this would at once curtail what is a prescriptive right, and this is the main obstacle to the introduction of a Game Law. Rich and poor alike enjoy this privilege, and although the occupier may in time come to learn that shooting rents can add to his income, or reserve his waste land for his own shooting and close it to the general public, as is done in many cases in the Dun below the Mussoorie Hills, it will be difficult to introduce restrictions on areas in which shooting is practically a right in all but name.

It is, we fear, hardly to be expected that the question of the formation of sanctuaries and their closing will be received without opposition throughout the country even amongst the Europeans, but I am of opinion that the matter is one of such great importance that the outcry of the few interested people opposed from personal motives to their formation on Government Land, both Reserve Forest and Waste Land, should not be allowed to blind the public generally to their immense value. It is conceivable that the Zemindar and large landed private proprietors would in course of time follow an example so set when its value made itself apparent to them.

It has been said that some Provinces, as also Native States, have already taken up and dealt with this matter, and it will be interesting here to see, province by province, exactly what progress has been made towards carrying out the policy of game protection by this means.

III. The Existing Game Sanctuaries in the Country.

A. British India.

I take British India first, and deal with Forest Areas only, which are practically the only areas in which Sanctuaries for game have been formed.

1. *The North-West Frontier Province.*

The only Forest Division in the North-West Frontier Province is that of Hazara, and the Deputy Conservator of Forests in charge says that no Game Sanctuaries have been formed in that Division.

2. *Punjab.*

A number of Game Sanctuaries have been formed in the Punjab, most of the Divisions containing one or more, in which the shooting of certain game is prohibited. Throughout the Punjab a close season is in force in all Reserved and Protected Forests for all game from March 15th to September 15th every year.

Rawalpindi. The Lalachitt, a Reserve, has an area of 93,000 acres. Half of this is closed alternately as a Game Sanctuary for a period of three years. The Barakao plantation of 200 acres is entirely closed to all shooting throughout the year.

Jhelam. In the Jhelam Division there are six sanctuaries entirely closed to shooting. These comprise the Reserves known as Rakb Ara Jadid (12,172 acres), Rakb Samarkand (south, 9196 acres), Rakb Phadial (10,722 acres), Rakb Tilla (24,314 acres), Rakb Nili (south, 17,114 acres), and Rakb Bazza (3742 acres).

Chenab. About 15,000 acres of the Pabbi Reserve and 525 acres of the Thatla Fagirullah Reserve are closed to all shooting.

Kangra. This is a Division with much scattered forest, and a large number of small areas have been made into Game Sanctuaries. A number of these have been closed for forestry reasons rather than directly for the protection of game. However, the results are the same, as they become *de facto* Game Sanctuaries. The game to be protected varies from the hill sheep and goats, oorial, serow, gural, etc., to pheasants, kalig, chukor partridge, kakar (*Cervulus muntjac*), etc. The following is a list of these sanctuary blocks, with their areas in acres:—

Dharamtal (634), Khanni (698), Tatal (1228), Chatril (1228), Mehdhar (367), Balnhi (312), Swarka (47), Bhali and Dolba (1266), Sildah (266), Ballah (371), Talara Gurial (788), Kalak (256), Mastgarh (240), Tilli (1013), Darang (558), Habrol (480), Gumar (400), Khardwar (123), Lohara (2580), Punjab (3610), Dharni (2822), Karnpur (3321), Bindraban (2946), Bohan (250), Phakhloh (55), Chagrin and Bhernal (285), Tather (60), Chowkidharin (61), Sariali (61), Tiri (52), Nobian (179), Khalig (56), Jamli (46), Khamahar (378), Baldoa (565), Lohjang (1082), Samlian (537), Tiamal (135), Bakarar (455), Behan (127), Naum (257),

Santhla (403), Saleti (83), Aloh I and II (62), Kandbari (5066), Soupdhar and Pundban (10,831), Boh (7834), Narwana (151), and Chanderban (4484).

Simla. The Division is practically all situated in the hills, the forests being mainly in Native States. The Deputy Commissioner, as Political Officer, issues passes for shooting, which cover everything outside certain specified preserves.

The patch of sal-forest known as Kalesar at the foot of the Simla Hills on the west bank of the Jumna River, area 11,570 acres, is closed to all shooting, as is also the Jagadhari or Kalanour plantation, an area of 197 acres. So also no shooting is permitted in the forests of the Simla Catchment Area. The forests of the rest of the division are open. Kalesar contains sambhar and chital, hog-deer and kakar; the Jagadhari plantation pheasants etc.; and the Simla Catchment Area gural, serow, pheasants, and chukor.

Lahore. The areas closed to shooting in the Lahore Division are mostly plantations. In the well-known Changa Manga plantation of Sissu and Mulberry, situated at about 40 miles from Lahore, Blocks III and XIV (area 4424 acres) are closed to shooting, as is also Shahdara Plantation close to Lahore (1828 acres) and the Shadhanwali Plantation area (3059 acres).

It will be seen from the above that in the Punjab considerable progress has been made in the endeavour to protect the game of the Province.

The game to be protected is nilgai in Changa Manga and game birds etc. elsewhere.

3. *United Provinces.*

Curiously enough, there are as yet no Game Sanctuaries in the United Provinces, and this in spite of the fact that many of the forests are probably amongst the most intensely shot over in the country. It is understood that this question is now receiving the consideration of the Lieutenant Governor and his Conservators of Forests, and it is probable that before long the game of the United Provinces will be given that amount of protection which is essential if its deterioration and disappearance is to be prevented. Were it possible to close blocks of considerable size in shooting grounds like those, *e. g.*, of the Dun (Siwalik Division), there might possibly be some hope of saving the wild animal fauna from extinction; that it is perilously near this, all who are familiar with the conditions and the absurd so-called shooting "rights" these forests are burdened with are well aware.

With Sir John Hewett, the Lieutenant Governor, I would advocate the closing of blocks of forest in every shooting division in the Province for periods of two (I advocate preferably three) years, the areas to be carefully selected and listed and closed and opened in rotation. If an example as to the necessity of this step being taken is required, it is only necessary to compare, say, the Patli Dun with the ruined Dehra Dun forests as an example of what unrestricted shooting, without protection, must lead to.

4. *The Central Provinces.*

As a whole, the Central Provinces may be considered to be the most advanced so far as game protection is concerned. The shooting regulations will be referred to at a later stage. They were revised by the Chief Commissioner in his Notification No. 1263, dated 28th October, 1907. For my present purpose it is sufficient to notice that they provide that areas or blocks of forests may be closed to shooting *absolutely* for purposes of forest management or as *sanctuaries* for the protection of game, other than carnivora, for the destruction of which special permits may be issued. The list of closed forests or blocks is prepared each year in October by the Conservators and is published in the *Central Provinces* Gazette, and copies are hung up in the Deputy Commissioner's and Forest Officer's offices.

It will thus be obvious that the Game Sanctuaries in the Central Provinces are formed automatically by the closing alternately of different forests or blocks of forest yearly. As a matter of fact, however, most of the present sanctuaries, though in many instances reduced in size, have been game sanctuaries since 1902, though a few others have been added later. It would be better if these areas were closed for periods of not more or less than three years. Of course, in the case of areas closed for purposes of forest management it is possible that they are closed for a considerable period of years, but nothing is said on this score in the rules nor as to the length of time blocks are closed for purely sanctuary purposes.

In addition to the automatic closure and opening of blocks there are other most valuable restrictions for the preservation of game, and I believe that I am correct in stating that this procedure is now applied to most of the blocks, instead of automatically closing and opening them. In any particular block or series of blocks only a certain head of any particular species may be shot. As soon as this number has been reached, that species is closed to shooting for the year. This rule might well be introduced elsewhere in the country. It is really better than the procedure of the Nilgiri Game Association of allowing each sportsman to shoot one or two head of each species, since the latter safeguard is in force also in the Central Provinces. The permit of each sportsman is endorsed with the number of head he may shoot, *e. g.* one bison, one sambhar, two chital, four other deer, and carnivora *ad. lib., provided the maximum number of head of the species allowable to be shot in the year has not been already reached.* This latter information is supplied him either by the divisional officer or by the Range officers in the areas for which his permit is made out. Were not this latter provision in force, one sportsman might shoot the whole number of, say, Barasingha (*Cervus duvauceli*) permissible for the year and thus close this particular animal to succeeding guns for the rest of the season—a somewhat unfair and onerous restriction.

In the Central Provinces excluding Berar in 1909 there were 24 Game Sanctuaries with an area of 1445 square miles in the

Northern Circle closed to shooting, but permits could be obtained to kill carnivora, and 293 sq. miles in the Southern Circle, or a total of 1738 sq. miles in the Province.

Other areas are closed conditionally, subject to the issue of a permit or to sportsmen being exempt from obtaining one.

As already stated, the blocks vary from year to year, and the list is made out annually in October and published.

The game protected are bison, buffalo, sambhar, barasingha, and chital, and, in fact, all horned game.

Berar.

The revision of the shooting rules in the Central Provinces in August 1905 was followed by a similar revision in those of the forests of the Berar Circle in the following October, the rule regarding the formation of Sanctuaries being made applicable here. The number of individuals of each species to be shot in a year is laid down and notified. An area of 885 sq. miles was closed to all shooting (save carnivora on permit) during 1909. Shooting in the other forests was subject to permits being taken out in the ordinary manner.

The game to be protected are chiefly sambhar and chital.

Bengal.

Bengal has recently taken up the question of Sanctuaries and under Notification No. 1992 For., dated 6th April, 1907, the following have been formed :—

Darjiling Division.

Senchal Forest. The boundaries of this Reserve are :—

North—Pashok Road from Jore bungalow to the 3rd mile.

East — From the 3rd mile to Lalkhunti where the road crosses the saddle (by the Rangbi path).

South—From Lalkhunti to the old military road.

West — The old military road to Jore bungalow.

Puri Division.

The Bharatpur, Jaimangal, and Majna forests are Game Sanctuaries.

In Angul and Puri the shooting of bison is prohibited.

The shooting of the rhinoceros, buffalo, and female bison is entirely prohibited throughout Bengal.

I would suggest that in certain parts of the Province further Sanctuaries are urgently needed. For instance, the game of the hill forests of Darjiling, Kurseong, and Tista Divisions, especially the two former which are surrounded by planters, requires protection if it is not to be completely exterminated. The Senchal Sanctuary can scarcely be considered sufficient in a country as rugged and difficult as the Himalayas. The plains and forests of both Kurseong and Tista Divisions were once noted for the game they held, but a very different state of affairs now exists and the accounts of old sportsmen are like legendary fables.

On the other side of the Province to the west, the opening out of Chota Nagpur by railway extension has thrown the forests open to a far larger number of rifles than was ever to be seen in that part of India a decade ago or less.

Singbhum, Palamow, Hazaribagh. The game in all these forests now requires protection if it is not to be wiped out by the rifles of such large centres as Calcutta etc., now brought within easy rail distance.

Rules such as are in force in the Central Provinces would be equally valuable and applicable to these parts of Bengal.

Eastern Bengal and Assam.

This province may be put almost on a par with the Central Provinces so far as the provision made for Sanctuaries for game is concerned. The work has not been carried out in all the divisions, but the ones most shot over are well provided in this respect, if we except Chittagong.

The provision of Sanctuaries, however, was not made any too soon, if, indeed, it can be considered to have been introduced soon enough. The apathy of the authorities has led to the deterioration of the stock of game almost to the verge of extinction. The forests are in large blocks, and it would have been sufficient in the past to enforce the rules under the Forest Act. Neglect to do so has reduced the numbers of such animals as rhinoceros, buffalo, and bison to such small figures that deterioration, if not extinction, now threatens these species.

The following Sanctuaries exist in the divisions detailed below:—

Khasi and Jaintia Hills. The Riat Khwan Sanctuary of 969 acres in this division is closed to all shooting, with the idea of preserving game in general and not of one or more particular species only. The Laitkar Sanctuary of 432 acres is closed to all shooting, with the idea of protecting insectivorous birds in addition to game in general. The Riat Laban of 995 acres is a sanctuary similar to the Laitkar.

Nowgong and Sibsagar. An immense Sanctuary known as the Kaziranga Sanctuary of 57,273·6 acres is closed to all shooting except permit-holders.

Nowgong. Lowkhawa Sanctuary of 25,760 acres is closed to all shooting, save that allowed to permit-holders.

Kamrup. The North Kamrup Sanctuary of 57,600 acres is also closed to shooting other than that allowed to authorised permit-holders.

Goalpara. Three large Sanctuaries have been created at the instance of Mr. W. F. Perrée, Divisional Forest Officer in this Division, probably one of the most visited from outside of any in Assam. The sanctuaries were in the first instance, I believe, designed to prevent the rhinoceros from being exterminated, but the buffalo and gaur are also carefully protected. Although shooting is said to be permitted to permit-holders I believe that, as a matter of fact, these sanctuaries have been entirely closed to all shooting.

The Sanctuaries comprise :—

(i.) Portions of the Raipur and Kachugaon Reserves (area 69,120 acres).

(ii.) A portion of the Raipur Reserve (area 30,040 acres) and a portion of the Bizni Reserve of 36,840 acres.

Jalpaiguri and Baksa Duars. I believe it is intended to form Sanctuaries in these two Divisions, newly acquired by Assam under the Partition. No Sanctuaries have been formed as yet, although they are, we understand, under consideration.

These forests, however, are nominally Sanctuaries already for certain animals, since the shooting of rhinoceros, buffalo, and bison is entirely prohibited. The forest blocks are, however, too small to furnish sufficient space for animals of such wandering dispositions. In former times the animals had access to the adjacent Bhutan Hills in the hot weather, to which they used to repair to escape the fly season. This outlet has now been cut off, owing to the settlements of Nepalis on the Outer Hills.

Chittagong. This is another of the ceded divisions. It might be suggested that a Sanctuary or two should be formed in some of the Reserve Forests in the Collectorate to protect the bison and sambhar, both from the over-keen European sportsmen and the neighbouring villagers, who are apt to help themselves and shoot anywhere. The neighbouring Hill Tracts also afford excellent areas for game protection.

Bombay.

In Bombay the question of Game Sanctuaries has received considerable attention, special areas having been set aside in which only pig, carnivora, and other destructive animals may be shot. To do so, however, entails a special endorsement being first made by the Divisional Forest Officer on the holder's shooting-permit, save in the case of Gazetted Officers whose jurisdiction extends to the Sanctuary in question. Such special permission cannot be given for a longer period than one month in each case.

In the Southern Circle there are four Sanctuaries, situated in the Belgaum, Kanara Northern, Kanara Southern, and Kanara Western Divisions, the areas being 26 sq. miles, 330 sq. miles, 400 sq. miles, and 216 sq. miles respectively.

These Sanctuaries have been specially made to afford protection to sambhar, chital, and bison.

In the Sind Circle a number of Game Sanctuaries have been formed in the Jerruck, Hyderabad, Naushahro, and Sukkur Divisions.

The chief game for which the closure has been prescribed is the "phara." The period for which the Sanctuary is formed is one of five years, at the end of which the Sanctuary will be thrown open and other forests closed.

The Sanctuaries are as follows :—

Jerruck Division.

The Sanctuaries in this Division are eleven in number :—Sonda

(area 2612 acres), Aligunj (1199), Shah Lanko (1743), Garko (4092), Chacb (1661), Marho Kotri (1668), Allahbux (2045), Bohadipur (2763), Sukhapur (3878), Hazari (2483), and Shatoh (277).

Hydrabad Division.

In this Division there are fourteen Sanctuaries:—Abad Thebat (640), Rajri Khasai (457), Budhopur Vaechero (748), Railo Boda (1322), Mahomed Khan (181), Kathri (756), Miani (5312), Elchi Hingoroni (288), Nurketi (4254), Kot Dhingano (1893), Kacho Lakha (4705), Mehrobpur (3012), Mari (17,651), Sai (5901).

Naushahro Division.

Fourteen Sanctuaries as follows:—Kocho Khairoders No. 1 (4118), Khairoders No. 2 Phulel and Dulotpur (3570), Lalia (2324), Dalipota (867), Kundoh (5965), Khairodero No. 1 (1650), Keti Lalia (1159), Karampur (1095), Gajidero (4336), Budhodero (1555), Nari (1522), Kasim Sah (2107), Akil (397), Sharifpur (212).

Sukkur Division.

All the forests of the Sukkur Division have been closed to shooting for five years, as big game (phara) has become scarce. These forests number 64 in all, covering an area of 273,497 acres.

Madras.

Reference has already been made to the excellent Game Association of the Nilgiris. Under the rules of this society, and the spirit in which they are worked out and observed, protection may be said to have reached a high state of perfection in the Ootacamund Hills.

The large resident European population in the hills has, of course, rendered the introduction and strict observance of the rules a much easier business than is likely to obtain in areas which are only visited by occasional sportsmen, who have not even the interest of the local resident officials, who are in a way permanent in the locality, in the upkeep of the head of game, and therefore clamour for free shooting, equal rights, etc.

To some extent the lead of the Nilgiri Game Association has been followed by the Forest Department, but at present apparently only in a small degree.

In the Southern Circle the only Sanctuaries existing in 1906 were situated in the Nilgiri District as follows:—

Nilgiri Game District. The whole Nilgiri Game District was closed to the shooting of pea-hens altogether and jungle-hens for one year. This was done by the Game Association.

Todanad Division. The Marlimund Plantation (17 acres) and the Kanabettri Forest (500 acres of the Segur Reserve) were closed to all shooting.

The Governor's Shola (33), Sheffield Plantation (25), Tiger Shola (20), Kurnutherguli Shola (78), and the Sholas on the east

and south sides of Hembar Hill (36), were closed to small-game shooting only.

South-East Wynaad. The Benne (10,344), Madumali (46,639), and the Kombarakkollai (1771) Reserves were closed to bison-shooting for one year from 1st June, 1906. Owing to the heavy mortality, from anthrax, bison had experienced a few years previously and to the increased shooting, this step was a much-needed one; the year could well be extended to three or more.

Kundahs. The Kundah Reserve of 40,379 acres was closed to beating for big game except tigers and panthers, and to the shooting of small game.

Paranginad. A number of Game Sanctuaries have been formed in this Division. In the Longwood Reserve the portion North and East of a line from Kengarai Sign Post to the top of the hill and Longwood No. 1 (30 acres); Nedukaduhalla (885). Sundatti Reserve and addition (123 and 35), Kunshola Nos. I and II (158), Madanad (722) and addition (708), Kodanad valley (294) and additions I and II (245), Nedugula (88) and addition (113), Avarahalla (121), Gudakahalla No. II north of Kilkotagiri bridle-path (70), Seven mile tope reserve (2), Kannerihodai (16), Nlavandmund Shola and additions I and II (118), Sullicodu Nos. I and II (308), Attukadu (71), Warbreccan (17), Sinnattu and addition (358), Uppatti Shola and addition (67), Doddakavu (62), Curzon Valley Block III west of Kilkotagiri-Curzon bridle-path (895). All these are reserves and are closed to beating for big game except tiger and panther; and are also closed to small-game shooting. In addition Rallia (382) and Sims Park (83) are closed to small-game shooting only.

The total area thus closed as Game Sanctuaries in the Nilgiri District in 1906 totalled 107,083 acres.

In the Central Circle only two districts were reported to have constituted Game Sanctuaries.

North Arcot District. In the North Arcot Division various additions to the shooting licenses had been made which will be considered under the shooting-permits. The number of head of particular game to be shot is limited in the case of certain species, as is the case in the Central Provinces. Special sanction has to be obtained for beating; and sitting up over water and salt licks is strictly prohibited.

The following reserves are closed to shooting, without the special permission in writing of the Collector and District Forest Officer:—

Chamala Reserve of 19,142 acres; Javadi Reserve of 403,566 acres; and the Musalimdugu Reserve of 5542 acres.

The game for which these Sanctuaries are especially created are sambhar, deer, black buck in the case of the Chamala Reserve, bison and deer in the Javadi Reserve, and deer and hare in the Musalimdugu Reserve.

In addition, 71 blocks of forest are closed to shooting during the fire season from 1st March to 30th June.

Tanjore District. The Point Calimere Reserve of 4204 acres is closed to the shooting of black buck, chital, and hare. Pigs and partridges may be shot without restriction and three black buck for each license given. All spotted deer, does, and young animals may not be shot between the 1st February and 31st July.

5. *Burma.*

Very little has been done as yet in Burma towards the formation of Game Sanctuaries. Fortunately Burma was but recently disarmed and Government has not given licenses in anything like the numbers granted elsewhere. In many parts game is believed to have increased, but the European sportsman has had little mercy on some species, and the fine herds of brow-antlered deer (*Cervus eldi*) in Lower Burma were almost exterminated before measures of protection were introduced. Deterioration must of necessity follow, even if the species be not entirely exterminated.

No Game Sanctuaries exist in the Pegu, Tenasserim, and Northern Circles.

In the Southern Circle, Upper Burma, the Maymyo Park Reserve was notified as a Sanctuary for game in an interesting notification which appeared on page 421 of the Burma Gazette for the 7th April, 1906. This Sanctuary is in the Mandalay Division, its extent being approximately $7\frac{3}{4}$ miles. The notification being the first of its kind in Burma, it will be of interest to reproduce it here.

"It is hereby notified under Rule 2 (2) of the rules under the Forest Act 1902 that, with the previous approval of the Local Government, the Maymyo Park Reserve is closed to the issue of licenses for shooting or fishing."

The Conservator in issuing a notice on this subject stated: "The object of this is to provide a sanctuary for pea-fowl and other game (chiefly barking deer and partridges) and to thereby enhance the pleasure of the numerous sections of the public who utilize the Reserve for riding and take an interest in the animals therein. It is hoped that the public generally will co-operate with the Officers of the Forest Department in seeing that the intention of the above notification is carried out."

The terms of the notification will not be enforced as regards snipe-shooting in the swamps, which may as heretofore be carried on without license at the proper season, nor will it be enforced as regards the shooting of dangerous carnivora. For the purpose of notification, the following are the rough boundaries of the Sanctuaries :—

North. The Lashio Road from the Circular Road to Yegyano.

East. Bames' ride from Yegyano to Kadettaw cut and the Circular ride from Nyaungni Pagoda to the Mandalay Road near Pwedaung quarry.

West. The Mandalay Road to the Circular road and the latter to its junction with the Lashio Road.

B. Native States.

1. *Kashmir.*

Allusion has already been made to the fact that the progressive Native State of Jammu and Kashmir has a Game Preservation Department as a separate part of the administration of the State, with an officer and special staff in charge of the work. This, I think, is the ideal at which British India should, and I believe will, eventually inevitably work up to.

The Department issues each year a printed copy of the Game Laws notification, which are applicable to everyone, save those persons especially excepted by order of His Highness the Maharaja in Council.

The Rules do not apply to the State Game Reserves, for which no shooting-permits are issued.

The existing State Game Reserves, about 300 sq. miles in extent, are:—

(1) Chashma Shahi, and (2) Dachgam, and the ridge of hills between these Rakhs, (3) Khonmoo, and the grass-farm between Sangri and Chak Khonmoo, (4) Khru, (5) Tral-cum-Kerrim, and Punjhair as far as the Bhoogmor Road, (6) Achabal, (7) Koolgam, (8) Kandi and Khoras in the Uri Nullah, the lower boundary of which is the new road to the Hajipir and Hokarsar Jhil.

N.B.—The basin above Pandrittan is a Sanctuary for chukor.

In General Raja Sir Amar Singh's Jagir and in the Ilaqua of the Raja of Poonch no one is allowed to shoot without the permission of the respective Rajas.

The following Nullahs will be considered as the private shooting-grounds of their respective Rajas, viz., Kapalu, Kharmung, Shigar, Rondu, Kiris, also that portion of the Mantho and Satpur Nullahs demarcated in 1905, for the Rajas of Tolti and Skardu, respectively. These nullahs will be closed for shooting, except with the permission of the Rajas concerned.

The following Nullahs are closed until further orders as Game Sanctuaries, and no shooting is permitted therein, nor is any grazing allowed:—

I. The Cretchen basin in the Lidder Valley from Bhatkote to Kitchroo (Srinagar Khass). Area 20 sq. miles.

II. The Kiar Nullah in the Duchan District of Kishtwar. Area 120 sq. miles.

III. The Gueo Nai in the Wardwan (Kishtwar). This is the nullah which joins the left bank of the Wardwan River one march above Maru Wardwan. Area 48 sq. miles.

IV. and V. Nimo and Masho in Ladakh. Area 40 and 36 sq. miles.

VI. Melangan in the Kajnag (Mozufferabad). Area 28 sq. miles.

VII. The Siranda branch of the Erin Nullah (Baramoula). Area 32 sq. miles.

VIII. Alchori and Hashopa and intermediate ground in the Shigar Valley (Baltistan). Area 50 sq. miles.

IX. Doosoo in the Nowboog district (Srinagar Khass). Area 60 sq. miles.

X. Shelter in Astor. Area 30 sq. miles.

XI. Soomjam and the Sapphire Mines Nullah in Kishtwar. Area 35 sq. miles.

XII. Gabdoori and Kunirawul in the Shamshibiri. Area 23 sq. miles.

As will be seen when we come to a consideration of the shooting rules in force, driving game is only permitted in certain localities at certain periods, the number of head to be shot on a license is restricted per species and neither females nor young may be shot.

2. *Chamba.*

Chamba is another of the favoured shooting grounds of the European from the climatic point of view, and under the late Raja the game was being rapidly destroyed. Under its present enlightened and most hospitable ruler conditions have altered, and shooting is now prohibited save on permits issued by the Raja himself.

Sportsmen have found little difficulty in obtaining such, the ground and number of head to be shot being indicated on the permit. The method of protection followed is on the lines of the Kashmir Shooting Regulations.

3. *Hyderabad* (Deccan).

Whilst there are no special Game Sanctuaries in the Hyderabad State Forests, the recently amended Game Regulations and the periodical opening and closure of certain tracts to shooting go to prove that His Highness the Nizam is fully aware of the necessity of affording protection to the wild game of his territory if it is not to be exterminated by over-shooting.

The Game Preserves of the State are of four classes:—

I. *His Highness the Nizam's own Preserve.*—This Preserve is situated in the Warangal Division in the neighbourhood of the Godavery Valley Railway, and has an approximate area of 828 sq. miles. Protection in this Preserve is provided to all game, and the shooting in this tract is reserved entirely for His Highness the Nizam or His Excellency the Minister. No permits to shoot can be obtained.

II. *His Highness the Nizam's State Preserves.*—These are situated in the vicinity of Yellander and Singarein. All game is protected, and permission to shoot can only be obtained from the Nizam or his Minister. This area is kept for the State guests,

and a permit would never be granted under ordinary circumstances to the casual sportsman.

III. *The Open Forests.*—The Open Forests are divided into three Divisions. These are opened each year from 1st March to 31st July and for ten days at Christmas in rotation, *i. e.* each division is open for one year and closed for two. The divisions are each divided up into separate blocks. Sportsmen wishing to shoot in any special block register their names, together with a fee of R. 25 before the 1st December. The names of persons applying for the blocks, in the event of there being more than one, are publicly balloted for by lot on a date fixed somewhere about 1st January and the permits are issued accordingly. Persons drawing a block pay an additional fee of R. 25 for each member of the party intending to shoot. Those failing to draw a block are refunded their deposited fee.

Anyone not occupying his block within a month of March 1st may be made to forfeit his right to do so, in which case the block is given to the next name drawn.

Priority of claim to an open block is always allowed to a person resident within H.H. the Nizam's territories.

The number of tigers allowed to be shot in a block is limited to a total average of two per each rifle in the party.

Deer are not, and never have been, protected in any way, and as nearly every person in the State is armed with a firearm of some sort, from the latest thing in Rigby cordite rifles to a horse-pistol, practically the only game existing outside the State Preserves is confined to carnivora and bears.

IV. *The Jaghirs.*—Jaghirdars have the right to give or refuse shooting-permits to applicants to shoot in their land, as they think fit. For others permission to shoot in a Jaghir is a private matter between the sportsman and the Jaghirdar.

4. *Pannah State* (Bundelkhand).

In the Pannah State there are two State Sanctuaries of about 50 sq. miles apiece, which have existed from time immemorial. No one is permitted to shoot in these, save the Maharaja and the Political Agent, so that they are not Game Sanctuaries in the true sense of the word. The license granted for shooting in other parts of the State prohibits the killing of tiger, chital, stag, sambhar (when hornless or in velvet), and doe sambhar throughout the year.

In a letter answering some enquiries put to him on the question of Game Protection in the Central India States, Mr. R. M. Williamson, I.F.S., who has a considerable experience of these States, wrote:—"Generally there is no protection of any sort of game outside the special State Preserves, except tiger, the killing of which is reserved for the ruler. This state of affairs is general in the Native States of Central India, and it is impossible to effect any improvement in this respect till additional forests are reserved

and brought under efficient protection. My experience both here (Rewah) and in Bundelkhand is that big game (save carnivora) is much scarcer than in British Indian Forests, *i. e.*, that the proportion of carnivora to other kinds of big game is far higher in these States than in British India."

5. *Bhopawar Agency.*

No regular Game Sanctuaries have yet been formed in the Bhopawar Agency, but the Game Rules are undergoing revision, and with this revision the formation of Sanctuaries is intended. A close season is in force, but it does not extend to solitary bison, stag or male antelope, florican or quail.

6. *Rewah State.*

Shooting of all kinds is prohibited in the Reserved Forests without special permission, which it is very difficult to secure. The area of the reserves totals, however, only 600 sq. miles. Elsewhere there is no game protection whatsoever for game, save tigers, the shooting of which the Maharaja reserves for himself and his guests.

7. *Cochin.*

The Conservator of Forests of the Cochin State informs me that no Game Sanctuaries have as yet been established in the Cochin State.

8. *Mysore.*

In Mysore seven areas have been set aside as Game Sanctuaries. No special rules have been framed for these areas, but the protection of bison, sambhar, and other deer is chiefly aimed at. It is apparent, however, that shooting is allowed in the areas, but only with the special permission of H.H. the Maharaja.

It seems a pity not to prohibit all shooting so long as an area is a sanctuary and to rotate the sanctuaries on a three or five yearly system.

These sanctuaries are situated as follows:—

1. *Mysore District.*—This District contains four sanctuaries, Kakenkote, Begur, Berambadi, and Chamarajanagar, of 55, 42, 102, and 98 sq. miles in area respectively.

2. *Hassan District.*—One Sanctuary, by name Hirikalgudda, of 27 sq. miles in area.

3. *Kadur District.*—One Sanctuary, Tegurgudda, of 9 sq. miles in extent.

4. *Shimoga District.*—One Sanctuary, Sakrebyle, of 15 sq. miles in area.

9. *Travancore.*

There are no Game Sanctuaries in Travancore, and none are considered necessary. The Conservator of Forests writes: "There are no Game Sanctuaries in the Travancore Forests, nor are they considered necessary, because the area of evergreen forests where

the game can take refuge is so extensive that there is no danger of its extermination. In the Reserved Forests extending over one-third of the State, hunting and shooting are only permitted after a license has been obtained."

IV. The Proposed Indian Game Act.

I shall now briefly glance at the provisions of the New Indian Game Protection Act.

The following is an abstract of the Proposed Indian Game Protection Act:—.

1. (1) To be called the Game Protection Act.
   (2) Includes all India, Baluchistan, Santhal Parganas, and Spiti.
   (3) To come into force when published in the Gazette of India.

2. "Game" and "large animal" to have meanings defined by Local Governments. In the absence of such definitions they shall mean:—
   (*a*) Game: The following in their wild state:—
      (I.) All pigeons and sandgrouse.
      (II.) Peafowl, jungle-fowl, pheasants, partridges, quail, spurfowl, florican, and their congeners.
      (III.) Geese, ducks, and their congeners.
      (IV.) Woodcock and snipe.
      (V.) Hares.
      (VI.) Asses, all kinds of rhinoceros, buffalo, bison, oxen; all kinds of sheep, goats, antelopes, and their congeners; all kinds of gazelles and deer.
      (VII.) Any other animals the Local Government may notify.
   (*b*) (I.) "Large animal" shall mean any animal included in subclause (VI.) above.
      (II.) "Specified kind" means any kind of game, large animal, or fish, distinguished by species, immaturity, or sex.

3. This Act does not affect:—
   (*a*) The pursuit, capture, or killing of:—
      (I.) Game by non-commissioned officers or soldiers, on whose behalf regulations have been made.
      (II.) Any animal for which a reward may be claimed from Government.
      (III.) Any large animal in self-defence.
      (IV.) Any large animal by a cultivator or his servants, whose crops it is injuring.
   (*b*) Anything done under license for possessing arms and ammunition to protect crops, or for destroying dangerous animals, under the Indian Arms Act (XI. of 1878).

Prohibitory Provisions.

4. No firearms shall be used or carried for killing game, without license under this Act, or under the Indian Arms Act.

5. The Local Government may, by notification, prohibit, within any local area, for any period, the capture, or killing, or attempt to capture or kill:—
   (*a*) All game, or any specified kind.
   (*b*) All game, or any specified kind, by any special means or manner, either absolutely or except in accordance with a license under this Act.

6. (1) The Local Government may prohibit the capture or killing (or attempt to capture or kill) of any fish, during any part of the year, in any specified stream, or in the headwaters of any specified river, or in any specified part thereof.
   (2) Any notification under this section shall be conclusive proof of the matters stated therein.

7. A Local Government may notify prohibition of the possession or sale of all game or fish, within Municipal or Cantonment limits, or in the importation of any kind of plumage of any specified kind of game.

Provisions as to Licenses.

8. (1) Licenses shall be granted under this Act, by authorities empowered under it, save as provided under sub-section (2).
   (2) A Local Government can authorise a Commissioner or, in Madras, the Collector, under orders of the Governor-General in Council, to grant licenses under this Act, for the use or carrying of firearms for killing game, throughout the whole of British India.
   (3) Under rules framed by a Local Government, the Collector, or any authority thereby empowered, may cancel any license granted under this Act:
      (*a*) When the holder has been convicted under this Act.
      (*b*) When any term of the license has been infringed.

9. (1) In addition to conditions prescribed by a Local Government, every license shall be deemed to be subject to the conditions set forth in any notification in force for the time being under section 5.
   (2) Every license shall specify:—
      (*a*) The area in which it is in force.
      (*b*) The instruments to be used, and in the case of a weapon to which the Indian Arms Act (IX. of 1878) applies, the person or persons by whom alone it may be used or carried.

(*c*) When the license is so restricted, the specified kinds of game, the periods, and the methods of capture or killing, to which alone it is to apply.

(3) When firearms are authorised, the license may limit the number of any specified kind of large animal which may be killed, and the fee payable for each such animal killed.

(4) Every such hunter, beater, or assistant, aiding the licensee, shall be protected by such license.

10. Every license under this Act is non-transferable, and may be granted for any period not exceeding a year, and may be renewed on payment of a fee of twenty rupees for each issue, and for renewal, provided :—

(1) That the Governor-General may notify a higher rate of fee in the Gazette of India, and that security shall be deposited on each issue or renewal, or from any specified class of persons.

(2) That a fee of only five rupees be payable by an owner of agricultural land ; the license to be in force exclusively within the village or villages in which such land is situated, and within a local area, if it includes more than one village, not exceeding fifteen hundred acres.

(3) That a Local Government may exempt any specified class of person, in any specified area, from payment of fees on licenses not authorising the use of firearms.

11. Every licensee is bound :—

(*a*) to produce his license for inspection, when demanded, by any Magistrate, Police officer not below the rank of Inspector, or in a forest by any Forest officer not below the rank of Extra Assistant Conservator ;

(*b*) to deliver up his license on expiry of the period for which it was granted, or when leaving India, whichever is sooner, to the Collector or any authority authorised to grant a license, or to the principal Police officer of a district.

12. Every licensee shall :—

(*a*) keep an account of any specified kind of large animal killed, giving sex, date, and place ;

(*b*) produce such account on demand made by any Magistrate, Police officer not below the rank of Inspector, or in a forest by any Forest officer not below the rank of Extra Assistant Conservator ;

(*c*) deliver up such account, and his license, on expiry of the period for which the license was granted, or on leaving India, whichever is sooner, to the principal Police officer of the District or Presidency town in which he then is.

13. (1) A licensee under this Act is exempt from the provisions of the Indian Arms Act as regards taking out a license for the same weapon, and the same area, under that Act.

(2) Every license granted under Forest regulations for the capture or killing of game, shall have the same effect as a like license granted under this Act.

Rules.

22. (1) A Local Government may make rules for the purposes and objects of this Act.

(2) Such rules may:—

(*a*) declare the authority by which the licenses may be granted or cancelled;

(*b*) prescribe terms and conditions under which such licenses are granted;

(*c*) provide for appeals from orders made under the Act, otherwise than by a Magistrate or Court.

V. Some Criticisms on the Proposed Act.

It will be of interest to consider in some slight detail several of the provisions of the proposed Act.

The Provincial Rules at present in force under which all Game Protection work is carried out are comprised in the Arms Act, Forest Act, and Fisheries Act.

The proposed new Act extends to all India, with the exception of Burma and, of course, the Native States. I have shown that some of these latter are already doing excellent work in Game Protection, and others will doubtless follow a firm lead set them by the Imperial Government.

It is not intended here to offer any seriously destructive criticisms on the above provisions of the suggested Game Act.

There are one or two points to which, however, I think attention might with advantage be drawn. In the second clause the meanings attached to "game," "large animal," and "bird" are distinctly and regrettably vague. I am unable to see any reason for this. If the drafters of the Bill were to apply to any zoologist in the country who has a practical working and sporting knowledge of the game life of India they could be furnished with detailed lists of animals both large and small: and by "animals"

I here mean "mammals" classed, say, into some such groups as, *e. g.*,

(a) *Carnivora.* Each species in the country to be quoted.

(b) *Herbivora.* do. do. do. do.

The various deer, antelope, goats, and sheep are all perfectly well known, and the preparation of lists detailing each animal by name is an absolutely easy matter.

(c) *Rodentia.* Including the hares, porcupines, etc., the total extinction of which from a sporting point of view is far from desirable.

(d) A *General Group* which may be made to include the rest of the *Mammalia.* This would allow protection to be extended, should it be deemed necessary from the point of view *of the preservation of the species* in the case of rare species now perhaps being exterminated for the value of their fur or for other reasons, to animals not at present included in the sportman's category of Game.

Turning to the Birds. There is no distinction made between migratory birds and non-migratory birds, and no mention made at all of *Insectivorous* Birds, and yet the distinction is one of enormous value in a great agricultural country like India, where the benefit the cultivators must derive annually from insectivorous birds is quite incalculable.

I suggest that the Birds be sharply defined into groups and the names of all the game-birds and of all the chief insectivorous birds be definitely given in the Act. This likewise is a matter of the greatest simplicity, since there would be no difficulty in drawing up such lists.

With a proper classification by name of all our animals and birds, sections and subsections 2 (*a*) (I.) to (VI.) would be revised and (VII.) and (*b*) (I.) and (II.) could be eliminated if considered necessary.

Turning now to section (3). Allowing that it is necessary to make separate rules for the Army, I think that the Act should specifically lay down that permits may not be given for parties of more than say 4–6 men from a cantonment to go out *together* to shoot in any area. At present it is well known that at times parties of from 15 to 20 or more men go out into a block of forest and drive the game systematically into a *cul-de-sac* and then slaughter the animals in numbers. The Gurkha is particularly addicted to this form of "sport" during the rainy season, when in the parts of the country where they are cantoned it is generally impossible for the European to go near the Terai forest owing to its great unhealthiness. Parties of military men should be small and the number of head they may shoot should be distinctly laid down on the permit, and penalties be enforced if this number is exceeded.

I think the Game Act might embody some such definite ruling for the whole country.

3. (II.) I am of opinion that Game rewards in general should be abolished and that no provision on the subject should be included in the Game Act.

It would be quite within the power of the Local Government to

issue rewards for the destruction of a particular species which is on the increase and becoming a danger either to public life or property or to the sporting interests of a particular area of country.

Also, save in exceptional cases, *e. g.* rogue elephants and man-eaters, I would abolish the giving of a reward for *every* tiger, leopard, wild dog or wolf slain.

Where any of these animals were becoming a pest or scourge to the community or endangering the head of game of other species in any locality, the Local Government should notify or empower its officers to notify a reward or scale of rewards to remain in force until the danger is past and the balance of power between man and animal or animal and animal is once again normal. The rewards on the prescribed animals should then be taken off.

Every shooting season nowadays sees an army of eager sportsmen competing for blocks and shooting-permits, and surely the giving of the old-time reward for a tiger is quite unnecessary. I would leave the grant of rewards or offer of rewards to the discretion of the District officer or Forest officer. They would when necessary prescribe such and such an animal to be a man-eater or cattle-lifter of notoriety and would fix a reward upon the animal, procuring, if considered necessary, the sanction of the Commissioner or Conservator to their doing so. Why Government should nowadays pay a reward of from Rupees 20 to Rupees 50 for a tiger which may be a pure game-eater and rarely if ever touch a cow (and there are numbers of such) is beyond my comprehension. Sportsmen will not slack off if the rewards are withdrawn. Many a district official would be only too delighted if they would. Once a man-eater or a noted cattle-lifter is proclaimed, then make it worth the sportmen's while to collect to tackle him by giving straight off a large reward commencing at R. 200 and going rapidly up to R. 500. It would be a far more satisfactory way of working the reward system both from the point of view of the cultivator, the man who lives on the soil, and that of the sportsman, and, I think, would probably be less costly to Government.

Or rewards might be offered only for tigers in a district or parts of a district where a noted man-eater or cattle-lifter has made his home. For every tiger killed in this area a suitable reward might be given, say R. 50, with the larger reward to be paid to the sportsman who bagged the particular man-eater or cattle-lifter prescribed. This would probably be the best method, since it would tempt sportsmen to have a try for the man-eater, knowing that they would receive a certain reward for each tiger killed, even if they should not be lucky enough to kill the prescribed beast.

VI. Some Suggestions for the Preservation of the Game of the Country in the Interests of the Game itself and of the Sportsman.

The maintenance of a proper head of a particular species on the areas it affects in the country, *i. e.*, in its own particular habitat,

is the first point for consideration, as we elsewhere mentioned, in the interests of the preservation of the species from

a. Deterioration,
b. Extinction.

The first point to be considered to ensure this object being attained is the question of close seasons.

It is not of advantage, as was done in many Presidencies and Provinces, to divide the year into two periods, calling one the close season and the other the open and apply them to all animals alike. Such a policy in a country of such varying conditions and climate as India is obviously not only inadequate but may do as much harm as good, for the breeding-seasons of many animals and birds vary totally from those of others, whilst some species breed at one time in one place and either later or earlier in other parts of the country. Take, for instance, the three chief deer in the Central Provinces (sambhar, barasingha, and chital). Of these the sambhar sheds its horns the earliest in the season (late April), the barasingha next, and the chital last, the latter a month or two, or more, later than the sambhar.

The close season for one obviously commences earlier than does that for the others. At the same time I am not prepared to say that the close season for sambhar in the Central Provinces would be the same for the United Provinces Terai or for the Assam Forests.

The drawing up of the close seasons for both animals and birds is a work for the Local Government. With the knowledge we now have of their habits, the preparation of such memoranda presents no difficulties whatsoever. For instance, in the Central Provinces Shooting Rules excellent Appendices are given in which the varying dates for the close seasons for the game-birds of the Province are laid down.

In drawing up the close seasons, therefore, I would prepare tables showing separately the close season for each animal and each game-bird of the Province. I also suggest that a separate Appendix be attached to the Shooting Rules giving the names of the insectivorous birds of the Province and enlisting the sympathies of all sportsmen in their protection. A list of the small predatory mammals and predatory birds such as hawks could also with advantage be attached to the Shooting Rules, with a recommendation to sportsmen to shoot such pests when met with. There appears to be little danger at present of their numbers decreasing to a dangerously low figure, and their depredations touch the cultivator in one way, though not perhaps such an obvious one, almost as closely as those of the large carnivora.

Having disposed of the question of the proper drawing up and enforcement of the correct close season for each particular species of animal and bird, we now come to a consideration of a question which is of almost equal importance.

In past years but scant attention has been paid to the severe attacks of a disease having kindred affinities to anthrax which

appears at intervals and takes a heavy toll of the head of game (such as bison (gaur), buffalo, sambhar, etc.) on the area it affects.

Further, in years of severe drought the mortality amongst the wild animals of the country affected is often very heavy, and in the past this factor has received no consideration from the authorities in the interests of the wild game.

I suggest that in the wake of such calamities a very careful and detailed inspection of the area or areas affected should be undertaken, with the object of ascertaining which species have suffered and to what extent. Until such survey has been carried out, no shooting-permits should be issued for the area or areas. After the survey the species which have suffered severely should be notified, as also the area affected, and this area should be entirely closed to the shooting of these particular species for such period as will ensure their multiplication to the number of head it is required to maintain on the area. In closing such area the notification should distinctly state the reason for the closure. No true sportsmen would be found to cavil at such a procedure.

The period of closure would require careful consideration. I remember reading a year or two ago that the Nilgiri Plateau was closed to the shooting of sambhar for *one* year. There would seem to be little use for such a procedure, as no growth of horn of any value to a sportsman can be put on by a stag in a year. Of course, such a provision might be of use in the case of areas which are repopulated from neighbouring forests outside the limits of the area for which the provisions are in force, and this may have been the object on the Nilgiri Plateau. Still it should be borne in mind, I think, that it is of little use closing areas or closing the shooting of particular species unless the time that species will take to produce the desired result is carefully taken into consideration. And nowadays such knowledge is available, since we have a first-rate working knowledge, thanks to many enthusiastic and hard-working sportsmen, of our game animals and birds.

In the case of an area affected by anthrax, for example. It would be necessary to close the area to the shooting of the decimated species for such a period as would allow a two-year old sambhar stag to produce a decent head, *i. e.* from 4–5 years. For bison or gaur the period would be longer, and so on. Sportsmen may decry this suggestion and say that it is too strict. But why ? The true sportsman, I take it, only wishes to shoot good heads. Supposing, for instance, one or two good sambhar heads only are left in an area. Only a man or two can get them. A sportsman may follow who has come expressly to the area to obtain a good sambhar. The anthrax attack was unknown to him. The result is that he wastes both his time and money, and has a very good complaint against the District Officials, who he very rightly considers should have notified that the area contained no good heads or, as we suggest, should have closed it to shooting of this species.

Some three or four years ago anthrax swept through a part of the Central Provinces and portions of Madras, resulting in a heavy mortality amongst the wild game, especially bison and

sambhar. I know of one or two recent cases where men coming from a long distance have taken blocks of forest in these areas, not knowing of the anthrax attack. Take the one animal, sambhar. One or two decent heads were bagged, but after that the most indefatigable and laborious search, both in plain and hill forest, resulted only in the disclosure of the fact that though young 2–3-year old stags were numerous, large ones were almost absent. It may be said that this in itself acts as an automatic closure. But it does not, as there is a considerable number of sportsmen who will shoot the smaller head, as an examination of trophies in the bungalows of every station in India will only too clearly disclose. The entire closure of the species to shooting after such visitations is the only fair action to take, both in the interests of the animal and of the sportsman.

And now to turn for a moment, in conclusion, to the question of the sportsman—the outside sportsman, not the District official—and the rules under which he can enjoy sport in a district.

The rules under which the District official enjoys sport in his district are, I think, quite fair in most if not all Provinces.

I think, however, that the outside sportsman has often a justifiable complaint, though more often than not he goes the wrong way about in making it, and so puts himself out of court.

The whole matter really turns, and must always turn, on the number of individuals of a particular species it is permissible to shoot on a given area. This number can only be fixed by the District Officers on the spot. There can be no cavil against this, as they are, or ought to be, the best judges on the question.

In fact, as matters in game protection at present stand, and in the absence of a separate Game Protection establishment, there can be no appeal from their decision.

Probably the best and most elastic method for the outside sportsman is to give him a block or blocks, according as to what is available on receipt of his application, and to enter on his permit the number of individuals of any one species he may shoot and the number of different species. This number would, of course, vary according to the length of time for which the permit was issued, but would never exceed a fixed maximum for each species. So far so good.

But it will doubtless soon be found necessary to definitely limit the number of head of a species to be shot in any one area in a year, as is done, in fact, in the Central Provinces. It is in this limitation that complaints arise and causes for friction come in.

For instance, supposing twelve sambhar may be shot in any particular block. A military man, whose leave season will not open before the 15th April, applies for and is allotted a block. He arrives to find the maximum annual number of the animal it is permitted to kill already reached and is debarred from shooting that particular species. It is quite conceivable that he might find more than one species in the same condition. In fact, the total number of head of a particular species might be easily shot off by the local District officials in the first couple of months of the open

season, the animal becoming then *de facto* closed to shooting for the rest of the open season.

This is where the shoe pinches the heel of the military man very hard, as also, of course, that of his civil brother when shooting on areas outside of his jurisdiction. To remedy a state of affairs which is undoubtedly a real grievance, I suggest that the number of individuals to be shot in a particular block or area in any one year should be allotted in a fixed proportion *throughout each month of the close season* for that animal, say 2 or 3 or 4 per month, according to the total number notified as shootable during that season, any balance remaining from any one or more months being, of course, carried forward and distributed throughout the remaining months of that shooting-season.

This would give the hot-weather military sportsman, who in pursuit of his favourite pastime is ready to put up with many and decided discomforts, an equal chance with his civil brother, who is not so tied during the cold weather. The suggestion is made simply with the idea of giving a fair chance to all.

But I would suggest a further step. I would allot a certain proportion of the head of a particular species to be shot in an area to the local District officials, the balance going to the outside sportsman. The District officials could be left to make their own arrangements as to when their proportion of head was to be shot, but I think that in the case of the outside sportsmen the number to be shot should be allotted throughout the shooting months, so as to give an equal chance to all the block-holders.

No reflection is intended on the District officials by any of these suggestions. They are made only in the interests of that particular quality all Englishmen pride themselves in possessing —Fair Play.

4. On the Moulting of an Arctic Fox (*Vulpes lagopus*) in the Society's Gardens. By R. I. Pocock, F.R.S., F.L.S., F.Z.S., Superintendent of the Gardens.

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(Text-figures 6–13.)

The following account of the seasonal change of colour and the phases in the moult of an Arctic Fox (*Vulpes lagopus*), which had been living in the Society's Gardens since 1904, is based on observations made during the summer of 1906.

The white winter coat was retained unchanged until the middle of May. In the latter half of that month it began to come off on the outside of the fore and hind legs, on the back of the ears, on the muzzle, and on the sacral region in front of the root of the tail. By the end of May the sacral patch had extended as a narrow strip down the thigh, joining the moulted area on the outer side of the lower portion of the leg. The hair was thinning on the back of the head, and as the white coat parted with the movements of